

~~Addendum~~

General Dynamics Corporation Shipyard  
Dravo Cranes (Structure 22S)  
97 East Howard Street  
Quincy/~~Braintree~~  
Norfolk County  
Massachusetts

HAER No. MA-26-F

HAER  
MASS  
11-QUI,  
10F-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
MID-ATLANTIC REGION, NATIONAL PARK SERVICE  
DEPARTMENT OF THE INTERIOR  
PHILADELPHIA, PENNSYLVANIA 19106

HISTORIC AMERICAN ENGINEERING RECORD

~~Addendum to~~

GENERAL DYNAMICS CORPORATION SHIPYARD

Dravo Cranes (Structure 22S)

HAER No. MA-26-F

**Location:** 97 East Howard Street at Fore River, Quincy/~~Braintree~~, MA. Bounded by East Howard Street (west), Quincy Avenue (south), Weymouth Fore River (east), South Street, Washington Street, and Fore River Bridge (north). Property lies in the cities of Quincy and Braintree, Norfolk County, Massachusetts.

USGS Weymouth, MA Quadrangle, Universal Transverse Mercator  
Coordinates: A. 29.337470.4678320  
B. 29.337390.4678130

**Fabricator:** Dravo Corporation, Engineering Works Division, Pittsburgh, PA

**Date of Construction:** 1939, 1940, 1941

**Present Owner:** Massachusetts Water Resources Authority  
Charlestown Navy Yard  
100 First Avenue  
Boston, Massachusetts 02129

**Present Use:** Vacant

**Significance:** The versatile Dravo Cranes are significant as an integral component of several phases of the shipbuilding processes at the Quincy-Fore River Shipyard from the early 1940s to 1984.

**Project Information:** This documentation was undertaken in June/July 1989 by the Massachusetts Water Resources Authority (MWRA) in accordance with a Memorandum of Agreement. Portions of the Shipyard will serve as a staging area and shipping point during construction of sewage treatment facilities on Deer Island in Boston Harbor and for other water supply and waste-treatment related activities. The Dravo Cranes are proposed for demolition.

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### Description and Operation

The General Dynamics Corporation/Quincy-Fore Shipyard possesses four similar 15-ton Dravo Revolving Gantry Cranes. Two are located on Outfitting Pier 3 (see HAER No. MA-26-D) in the east-central waterfront area and two in the south plate yard, south-west area of the shipyard. All were acquired by the Bethlehem Steel Company in 1939, 1940, and 1941.

Dravo D-1, sited at the north end of Pier 3, was acquired in 1941. From the completion of Pier 3 in 1942 until circa 1958 when D-2 was relocated to the pier, D-1 operated alone.

The gantry crane's superstructure has four legs, each built of box-section lattice girders. They are spaced 40 feet apart at the base on the east and west and 30 feet apart on the north and south. The legs slant inward so that in plan the crane measures 40x30 feet at the bottom and 18x18 feet at the top of the legs. The legs are joined at the top by the main platform and at the bottom by plate box girders. The legs are not joined on the north and south, leaving the tower open in the direction of travel. The legs are braced in three stages.

The pivot pin is 73 feet, 8 13/16 inches above the travel rails and turns a ring mechanism set in a steel plate structure which supports the drive mechanism and operator's deck and housing. The crane boom is 85 feet long with a counter weight of 5,000 pounds. With a 15 ton load it has a hoisting speed of 55 f.p.m. and a rotating speed of 1.47 r.p.m. It has a 15 ton capacity within a 35 to 60 foot radius.

In operation, two sets of wire ropes pass from drums in the welded steel plate combination machine house/operator's cab through a series of sheaves to raise and lower the boom and hoist hook. Power is provided by a 65 h.p. electric motor and transmission. The drive motor for swinging movement comes from a 15 h.p. motor. Both run on 230 volt D.C. electric current.

The crane travels on four trucks, each with a pair of double flanged wheels running on track laid 30 feet on center. The rail is marked "104-CR OH BS CO. STEELTON 1942". Access up the crane is via a series of ladders originating at the southeast leg.

### 1989 Conditions

The crane is in fair condition and was in use until the ship yard closed in 1984.

### Historical Significance

The Dravo cranes were purchased by Bethlehem Steel as part of major yard improvements to gear up for World War II military construction. Two were placed in the plate yard area, one on the

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newly constructed Outfitting Pier 3 and one in the basin area. In these locations, the cranes were integral to three phases of the shipbuilding process: unmodified steel plate handling, hull fabrication, and fitting out. Their role in yard activities spanned the period from the early 1940s until 1984 when the shipyard closed. Components of much of the yard's output was handled by these versatile hoisting machines.

When erected, the Dravo cranes represented the state-of-the-art in shipbuilding hoisting equipment. They combined the high clearance and wide range of action essential for shipbuilding with the added advantages of boom lift and crane travel. Many of the subsequent cranes installed in the shipyard were designed in a similar mode, reflecting the success of this type of crane.

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**Bibliography**

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Yard Plans Sheets 1A, 2, 4, 4A, 1943.

Boston Affiliates, Inc.

Quincy-Fore River Shipyard Historic Resources Survey and Addendum. Prepared for  
Massachusetts Water Resources Authority, October 20, 1988 and January 2, 1989.

General Dynamics Corporation

File Records at Shipyard 1964-1984.

General Dynamics Corporation

Yard Plans Sheets 1A, 2, 4, 4A, 1943 revised to 1978.

[Note: For archival and additional sources, see Addendum to General Dynamics Corporation  
Shipyard HAER No. MA-26.]

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